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1. A process for forming a silicon oxide layer of non-uniform thickness on a surface of one and the same silicon substrate, [characterized in that it comprises] comprising:

[a) the implantation] implanting in predetermined regions of the substrate [of] an effective dose of atoms of a chemical species which increases the rate of oxidation of the substrate; and

[b) the growth of] growing a silicon oxide layer of non-uniform thickness by [oxidation on] oxidizing the surface of the substrate.

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2. (Amended) The process as claimed in claim 1, [characterized in that] wherein the chemical species are chosen from Si, Ge, Ar, Ne and He.

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3. (Amended) The process as claimed in claim 1 [or 2, characterized in that the implantation step] wherein implanting in predetermined regions is an ion implantation step.

4. (Amended) The process as claimed in [any one of claims 1 to 3, characterized in that] claim 1 wherein the implantation energy is between 2 and 100 keV[, preferably 2 to 80 keV].

5. (Amended) The process as claimed in [any one of claims 1 to 4, characterized in that] claim 1 wherein the implanted dose is from 5×10^{13} to 5×10^{15} atoms/cm²[, preferably 1×10^{15} to 5×10^{15} atoms/cm²].

6. (Amended) The process as claimed in [any one of claims 1 to 5, characterized in that] claim 1 wherein growing a silicon oxide layer comprises oxidation [the growth step by oxidation is an oxidation step] in a furnace, by plasma oxidation, electrochemical oxidation or rapid thermal oxidation.

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7. (Amended) The process as claimed in claim 6, [characterized in that the step of] wherein growing the silicon oxide layer [is] comprises an oxidation step in a furnace at a temperature of at least 300°C and in an oxidizing atmosphere.

Please add the following claims:

--8. The process as claimed in claim 2, wherein implanting in predetermined regions is an ion implantation step.--

--9. The process as claimed in claim 1 wherein the implantation energy is between 2 and 80 keV.--

--10. The process as claimed in claim 2 wherein the implantation energy is between 2 and 100 keV.--

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--11. The process as claimed in claim 3 wherein the implantation energy is between 2 and 100 keV.--

--12. The process as claimed in claim 1 wherein the implanted dose is from 1×10^{15} to 5×10^{15} atoms/cm².

--13. The process as claimed in claim 2 wherein the implanted dose is from 5×10^{13} to 5×10^{15} atoms/cm².

--14. The process as claimed in claim 3 wherein the implanted dose is from 5×10^{13} to 5×10^{15} atoms/cm².

--15. The process as claimed in claim 4 wherein the implanted dose is from 5×10^{13} to 5×10^{15} atoms/cm².--

--16. The process as claimed in claim 5 wherein the implanted dose is from 5×10^{13} to 5×10^{15} atoms/cm².--